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REMARKS

This response is intended as a full and complete response to the non-final Office Action mailed July 11, 2005. In the Office Action, the Examiner notes claims 1-10 and 14-20 are pending and rejected. By this response, claim 20 is amended. Claims 2 and 7 are hereby cancelled.

In view of both the amendments presented above and the following discussion, Applicants submit that none of the claims now pending in the application are obvious under 35 U.S.C. §103. Therefore, Applicants believe that this application is now in condition for allowance.

It is to be understood that Applicants, by amending the claims, do not acquiesce to the Examiner's characterizations of the art of record or to Applicants' subject matter recited in the pending claims. Further, Applicants are not acquiescing to the Examiner's statements as to the applicability of the art of record to the pending claims by filing the instant responsive amendment.

REJECTIONS

35 U.S.C. §103

Claims 1, 3, 6-7, 14, 16 & 18

The Examiner has rejected claims 1, 3, 6-7, 14, 16 and 18 under 35 U.S.C. §103(a) as being unpatentable over Tyrrell (U.S. Patent No. 5,185,736, hereinafter "Tyrrell") in view of Livermore (U.S. Patent No. 6,542,511, hereinafter "Livermore"). Applicants respectfully traverse the rejection.

In general, Tyrrell teaches a synchronous optical transmission system for interfacing SONET formatted channels to lower speed channels in either SONET format or otherwise. (Tyrrell, Abstract). In particular, the system includes terminal multiplexers and add-drop multiplexers for terminating lower speed channels, adding low speed channels to a high speed SONET channel, and to interface

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high speed SONET channels to other high speed SONET channels. (Tyrrell, Col. 1, Lines 15-20).

Tyrrell, however, fails to teach or suggest each and every element of Applicants' invention of at least claim 1. Namely, Tyrrell fails to teach or suggest each of the limitations of "an interface to a high capacity trunk for coupling to a type one node and an interface to a high capacity trunk for coupling to a type two node, wherein only a portion of those low capacity client signals destined for the type one node are groomed into the high capacity trunk to the type two node," as taught in Applicants' invention of at least claim 1. Specifically, Applicants' claim 1 positively recites:

A node for grooming low capacity client signals into a high capacity signal, comprising:
an interface to a high capacity trunk for coupling to a type one node; and
an interface to a high capacity trunk for coupling to a type two node;
wherein only a portion of those low capacity client signals destined for the type one node are groomed into the high capacity trunk to the type two node.

As such, Applicants' invention of at least claim 1 teaches a node including an interface to a high capacity trunk for coupling to a type one node and an interface to a high capacity trunk for interfacing to a type two node. In the Office Action, the Examiner asserts that Tyrrell teaches that an "ADM or node inherently has an interface to a high speed capacity trunk called an east connection or type 2 node and also inherently has an interface to a high speed capacity trunk called a west connection or type 1 node." (Office Action, Pg. 2). The Applicants respectfully disagree.

As taught in Tyrrell, however, east and west connections do not denote different node types such that an east connection constitutes an interface to a type one node and a west interface constitutes an interface to a type two node. Rather, the east and west connections taught in Tyrrell merely denote direction of transmission and have no bearing on the type of node to which the east and west interfaces are connected. In other words, the interface from the ADM to another ADM on an east connection denotes a direction of transmission from the ADM to

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another ADM. Similarly, the interface from the ADM to another ADM on the west connection denotes a direction of transmission from the ADM to another ADM.

Tyrrell is completely devoid of any teaching or suggestion that the east and west connections are interfaces for coupling to different node types. The only type of nodes taught in Tyrrell are ADMs, and if the ADMs are assumed to be type one nodes then Tyrrell is devoid of any teaching or suggestion of type two nodes. As such, the east and west interfaces from an ADM both constitute interfaces to a type one node (or, alternatively, a type two node). A pair of interfaces for coupling to respective type one nodes which happen to be located in different directions of transmission from the ADM, as taught in Tyrrell, is not an interface for coupling to a type one node and an interface for coupling to a type two node, as taught in Applicants' invention of at least claim 1.

Furthermore, Applicants' invention of at least claim 1 teaches "wherein only a portion of those low capacity client signals destined for the type one node are groomed into the high capacity trunk to the type two node." As admitted by the Examiner, however, Tyrrell is completely devoid of any teaching or suggestion of " wherein only a portion of those low capacity client signals destined for the type one node are groomed into the high capacity trunk to the type two node." As such, the Examiner cites Livermore for teaching this limitation of Applicants' invention. Livermore, however, fails to bridge the substantial gap as between Tyrrell and Applicants' invention of at least claim 1.

In general, Livermore teaches a programmable transport node for use in a scaleable high-performance multiservice network. The network may be a mesh network with dynamically adjustable link capacities and nodes for packing data into containers for transport across the network. The network may also be a ring-based network having nodes exchanging data containers. (Livermore, Abstract). Livermore, however, does not teach each and every element of Applicants' invention of at least claim 1. Namely, Livermore fails to teach or suggest at least the limitations of "an interface to a high capacity trunk for coupling to a type one node and an interface to a high capacity trunk for coupling to a type two node, wherein only a portion of those low capacity client signals destined for the type

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one node are groomed into the high capacity trunk to the type two node," as taught in Applicants' invention of at least claim 1.

As described herein, Applicants' invention of at least claim 1 teaches a node including an interface to a high capacity trunk for coupling to a type one node and an interface to a high capacity trunk for coupling to a type two node. By contrast, Livermore teaches networks in which all of the nodes are identical. As such, Livermore merely teaches nodes having one or more interfaces for coupling to one or more type one nodes (or, alternatively, type two nodes), respectively. Livermore is completely devoid of any teaching or suggestion of an interface for coupling to a type one node and an interface for coupling to a type two node, as taught in Applicants' invention of at least claim 1.

As such, Livermore is completely devoid of any teaching or suggestion of the limitations of "an interface to a high capacity trunk for coupling to a type one node and an interface to a high capacity trunk for coupling to a type two node," as taught in Applicants' invention of at least claim 1. Furthermore, since Livermore is devoid of any teaching or suggestion of an interface for coupling to a type two node, Livermore must be devoid of any teaching or suggestion of "wherein only a portion of those low capacity client signals destined for the type one node are groomed into the high capacity trunk to the type two node," as taught in the Applicants' invention of at least claim 1.

As described herein, Applicants' invention of at least claim 1 teaches that only a portion of the low capacity client signals destined for the type one node are groomed into the high capacity trunk to the type two node. By contrast, Livermore teaches that client signals destined for a type one node are groomed into a trunk to the type one node. Specifically, Livermore teaches a pass-through interface on a first ADM in a ring of ADMs such that a portion of the client signals received at the first ADM are allowed to pass through the first ADM for transmission to a second ADM in the ring of ADMs. As such, client signals destined for the second ADM in the ring of ADMs are groomed into a trunk coupling the first ADM to the second ADM. In other words, as taught in Livermore, client signals destined for the type one node (the second ADM) are

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allowed to pass through the node (the first ADM) such that the client signals are groomed into a trunk to the type one node (i.e., the client signals are not dropped through the low-speed interface of the first ADM).

Moreover, although Livermore shows add-drop connections associated with the ADM, even if the add-drop interface of each of the ADMs teaches an interface for coupling to a type two node (which Applicants maintain that it does not), Livermore still fails to teach or suggest that a portion of the low capacity client signals destined for the type one node are groomed into a high-capacity trunk to the type two node, as taught in Applicants' invention of at least claim 1. Rather, Livermore would merely teach that client signals destined for a type two node are dropped via the low-speed interface of the ADM such that the client signals are groomed into a low-capacity trunk to the type two node.

In other words, even assuming that Livermore teaches an interface for coupling to a type two node (which Applicants maintain it does not), Livermore still merely teaches that client signals destined for a type one node are groomed into a trunk connected to the type one node and client signals destined for the type two node are groomed into a trunk connected to the type two node. There is no teaching or suggestion in Livermore of a node associated with the add-drop interface of the ADMs, much less that signals destined for a second ADM on the ring (a type one node) are dropped from a first ADM and transmitted towards another node (a type two node) via the add-drop interface. As such, Livermore fails to teach or suggest at least the limitation of "wherein only a portion of those low capacity client signals destined for the type one node are groomed into the high capacity trunk to the type two node," as taught in Applicants' invention of at least claim 1. As such, Tyrrell and Livermore, either alone or in combination, fail to teach Applicants' invention as a whole.

The test under 35 U.S.C. §103 is not whether an improvement or a use set forth in a patent would have been obvious or non-obvious; rather the test is whether the claimed invention, considered as a whole, would have been obvious. Jones v. Hardy, 110 USPQ 1021, 1024 (Fed. Cir. 1984) (emphasis added). Moreover, the invention as a whole is not restricted to the specific subject matter

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claimed, but also embraces its properties and the problem it solves. In re Wright, 6 USPQ 2d 1959, 1961 (Fed. Cir. 1988) (emphasis added). The Tyrrell and Livermore references, alone or in combination, fail to teach or suggest Applicants' invention as a whole.

As such, Applicants submit that independent claim 1 is not obvious and fully satisfies the requirements of 35 U.S.C. §103 and is patentable thereunder. Furthermore, independent claims 6 and 14 recite features substantially similar to the features of claim 1. As such, for at least the same reasons discussed herein with respect to claim 1, Applicants submit that independent claims 6 and 14 are not obvious and fully satisfy the requirements of 35 U.S.C. §103 and are patentable thereunder.

As such, Applicants submit that independent claims 1, 6 and 14 are not obvious and fully satisfy the requirements of 35 U.S.C. §103 and are patentable thereunder. Furthermore, claims 3, 7, 16 and 18 depend, either directly or indirectly, from independent claims 1, 6, and 14, and recite additional features therefor. Accordingly, at least for the same reasons as discussed above, Applicants submit that these dependent claims are also not obvious and fully satisfy the requirements of 35 U.S.C. §103 and are patentable thereunder. Therefore, Applicants respectfully request that the Examiner's rejection be withdrawn.

Claims 5, 10 and 15

The Examiner has rejected claims 5, 10, and 15 under 35 U.S.C. §103(a) as being unpatentable over Tyrrell in view of Livermore further in view of Shinbashi (U.S. Patent No. 5,754,545, hereinafter "Shinbashi"). Applicants respectfully traverse the rejection.

For at least the reasons discussed above, Tyrrell and Livermore, either alone or in combination, fail to teach or suggest Applicants' invention as a whole. Furthermore, Shinbashi fails to bridge the substantial gap between Tyrrell and Livermore and Applicants' invention. Namely, Shinbashi does not teach or suggest at least the limitation of "wherein only a portion of those low capacity

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client signals destined for the type one node are groomed into the high capacity trunk to the type two node," as taught in Applicants' invention of at least claim 1.

Rather, Shinbashi teaches that a portion n of the N signals received from the first transmission line are sent to a second transmission line via a partial drop unit and the portion of the signals not selected by the partial drop unit, i.e., $N-n$ signals, are sent to a first transmission line via a partial add unit). In other words, Shinbashi merely teaches that signals destined for the receiving end of the second transmission line are selected for transmission on the second transmission line. Similarly, Shinbashi teaches that signals destined for the receiving end of the first transmission line are selected for transmission on the first transmission line.

Shinbashi is completely devoid of any teaching or suggestion that the $N-n$ signals selected for transmission over the first transmission line are destined for the terminating end of the second transmission line. Similarly, Shinbashi is completely devoid of any teaching or suggestion that the n signals selected by the partial drop unit for transmission over the second transmission line are destined for the terminating end of the first transmission line. Thus, there is no teaching or suggestion in Shinbashi that signals destined for the receiving end of the second transmission line are groomed for transmission on the first transmission line, or that signals destined for the receiving end of the first transmission line are groomed for transmission on the second transmission line.

As such, Applicants submit that independent claims 1, 6 and 14 are not obvious over Tyrrell in view of Livermore further in view of Shinbashi and fully satisfy the requirements of 35 U.S.C. §103 and are patentable thereunder. Furthermore, claims 5, 10, and 15, depend, either directly or indirectly, from independent claims 1, 6, and 14, and recite additional features therefor. Accordingly, at least for the same reasons as discussed above, Applicants submit that these dependent claims are also not obvious and fully satisfy the requirements of 35 U.S.C. §103 and are patentable thereunder. Therefore, Applicants respectfully request that the Examiner's rejection be withdrawn.

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Claims 4, 9 and 17

The Examiner has rejected claims 4, 9 and 17 under 35 U.S.C. §103(a) as being unpatentable over Tyrrell in view of Livermore further in view of Ardon (U.S. Patent No. 5,105,420, hereinafter "Ardon") further in view of Inoue (U.S. Patent No. 5,214,312, hereinafter "Inoue"). Applicants respectfully traverse the rejection.

For at least the reasons discussed above, Tyrrell and Livermore, either alone or in combination, fail to teach or suggest Applicants' invention as a whole. Furthermore, Ardon and Inoue, either alone or in combination, fail to bridge the substantial gap between Tyrrell and Livermore and Applicants' invention. Namely, Ardon and Inoue both fail to teach or suggest at least the limitation of "wherein only a portion of those low capacity client signals destined for the type one node are groomed into the high capacity trunk to the type two node," as taught in Applicants' invention of at least claim 1.

Rather, Ardon teaches reconfiguration of the functional units of a switching system such that groups of peripheral circuits are connectable to the switching units. In particular, the distributed control entities and the distributed switch units of the switching system are in fixed association while the association between peripheral circuits and the control and switch units is not fixed. (Ardon, Abstract). In other words, the interconnect arrangement of Ardon merely allows the peripheral interface units, which send and receive information between nodes using associated peripheral communication links, to interface with different switch units within the switching system. Ardon is completely devoid of any teaching or suggestion that a portion of low capacity client signals destined for a type one node are groomed into a high capacity trunk to a type two node, as taught in Applicants' invention of at least claim 1.

Furthermore, Inoue generally teaches a power feed line switching circuit arrangement. The power feed line switching circuit enables delivery of power to submarine branching units and associated repeaters. In other words, Inoue is directed toward power distribution for ensuring that submarine network elements such as submarine branching units and associated submarine repeaters have a

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highly reliable power source. Inoue is completely devoid of any teaching or suggestion that a portion of low capacity client signals destined for a type one node are groomed into a high capacity trunk to a type two node, as taught in Applicants' invention of at least claim 1.

As such, Applicants submit that independent claims 1, 6 and 14 are not obvious and fully satisfy the requirements of 35 U.S.C. §103 and are patentable thereunder. Furthermore, claims 4, 9 and 17 depend directly from independent claims 1, 6 and 14 and recite additional features therefor. Accordingly, for at least the same reasons as discussed above, Applicants submit that these dependent claims are also not obvious and fully satisfy the requirements of 35 U.S.C. §103 and are patentable thereunder. Therefore, Applicants respectfully request that the Examiner's rejection be withdrawn.

Claims 19 and 20

The Examiner has rejected claims 19 and 20 under 35 U.S.C. §103(a) as being unpatentable over Tyrrell in view of Livermore further in view of Nishio (U.S. Patent No. 6,075,630, hereinafter "Nishio"). Applicants respectfully traverse the rejection.

For at least the reasons discussed above, Tyrrell and Livermore, either alone or in combination, fail to teach or suggest Applicants' invention as a whole. Furthermore, Nishio fails to bridge the substantial gap as between Tyrrell and Livermore and Applicants' invention. Namely, Nishio fails to teach or suggest at least the limitation of "wherein only a portion of those low capacity client signals destined for the type one node are groomed into the high capacity trunk to the type two node," as taught in Applicants' invention of at least claim 1.

Rather, Nishio teaches a combined electrical-optical network node control system. In particular, Nishio teaches that traffic characteristics of virtual paths are monitored, and a network management system is notified if the characteristics exceed threshold. The network management system establishes an optical path between certain network nodes and uses the optical path to transfer the virtual paths by multiplexing the virtual paths with the optical paths. Nishio, however, is

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completely devoid of any teaching or suggestion that a portion of low capacity client signals destined for a type one node are groomed into a high capacity trunk to a type two node, as taught in Applicants' invention of at least claim 1.

As such, Applicants submit that independent claims 1 is not obvious and fully satisfies the requirements of 35 U.S.C. §103 and is patentable thereunder. Furthermore, claims 19 and 20 depend directly from independent claim 1 and recite additional features therefor. Accordingly, at least for the same reasons as discussed above, Applicants submit that dependent claims 19 and 20 are not obvious and fully satisfy the requirements of 35 U.S.C. §103 and are patentable thereunder. Therefore, Applicants respectfully request that the Examiner's rejection be withdrawn.

CLAIM OBJECTIONS

The Examiner has rejected claims 2, 7, and 20 for various informalities. In response, Applicants have herein cancelled claims 2 and 7, and have amended claim 20 to change "method" to "apparatus."

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CONCLUSION

It is respectfully submitted that all the rejections have been overcome and that this application is in condition for allowance. Reconsideration of this application and its allowance are respectfully solicited.

If, however, the Examiner believes that there are any unresolved issues requiring adverse final action in any of the claims now pending in the application, it is requested that the Examiner telephone Eamon J. Wall, Esq. at (732) 530-9404 so that appropriate arrangements can be made for resolving such issues as expeditiously as possible.

Respectfully submitted,

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